

National Advanced Driving Simulator

**Status Briefing
Government-Industry Meeting
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**H. Keith Brewer
Office of Human Centered Research
NHTSA**

NADS DEVELOPMENT PROGRAM

- ***PHASE I - DESIGN COMPETITION***
- ***PHASE II - SYSTEM DEVELOPMENT***
- ***PHASE III - OPERATIONAL SUPPORT***

NADS CONTRACTOR TEAM

- ***TRW - SYSTEMS INTEGRATION, CALIFORNIA***
- ***MTS - MOTION SYSTEM, MINNESOTA***
- ***EVANS & SUTHERLAND - VISUAL SYSTEM, UTAH***
- ***DYNAMIC RESEARCH INC. - CABS, CALIFORNIA***
- ***I*SIM - AUDIO SYSTEM, UTAH***
- ***THE UNIVERSITY OF IOWA - SCENARIO CONTROL***



NADS/SC facility



NADS x-y motion base

NADS MOTION SYSTEM SPECIFICATIONS

Motion Subsystem	Axis	Specification		
Component		Displacement	Velocity	Acceleration
		±ft	±ft/sec	±ft/sec ² (±g)
X-Y	X	32	20	20 (0.6)
X-Y	Y	32	20	20 (0.6)
Hexapod	Z	2	5	32 (1.0)
		±deg	±deg/sec	±deg/sec ²
Hexapod	Pitch	25	45	120
Hexapod	Roll	25	45	120
Turntable	Yaw	330	60	120
		±in	±in/sec	±lbf
Vibration	Z	0.2	8	1000

NADS - DOCKING POSITION



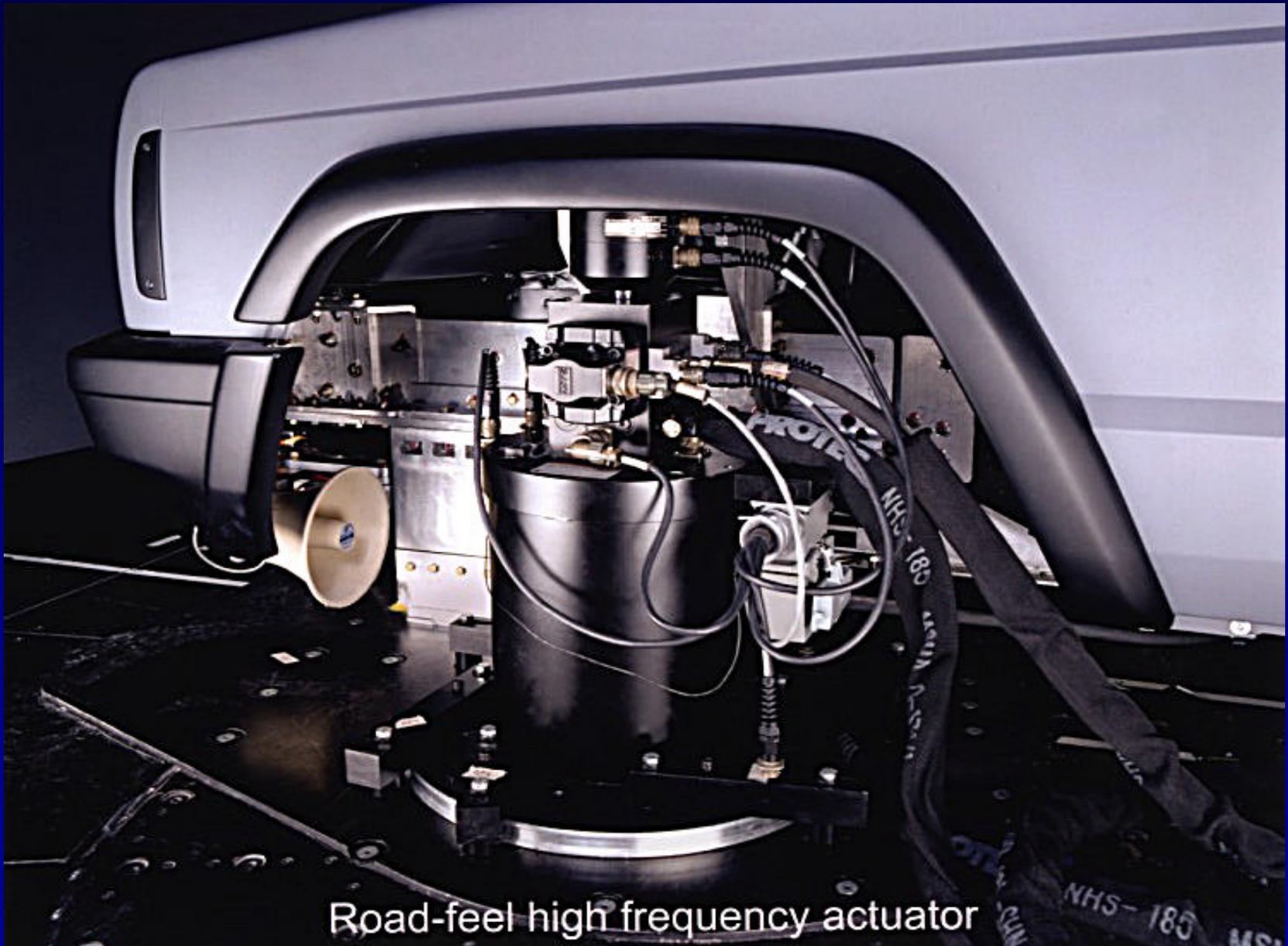
VEHICLE LOADING POSITION



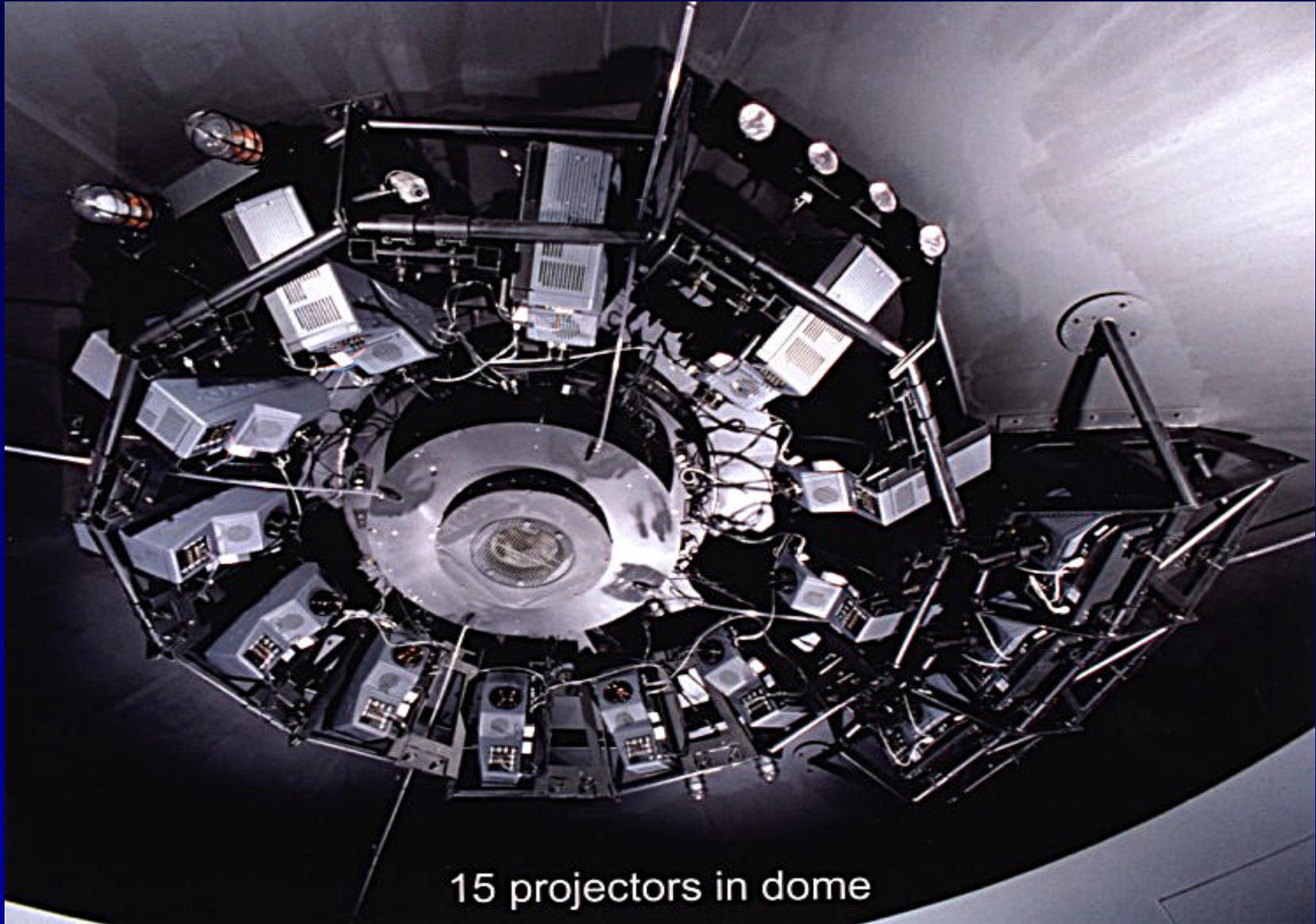




SIMOP/RIM control room



Road-feel high frequency actuator



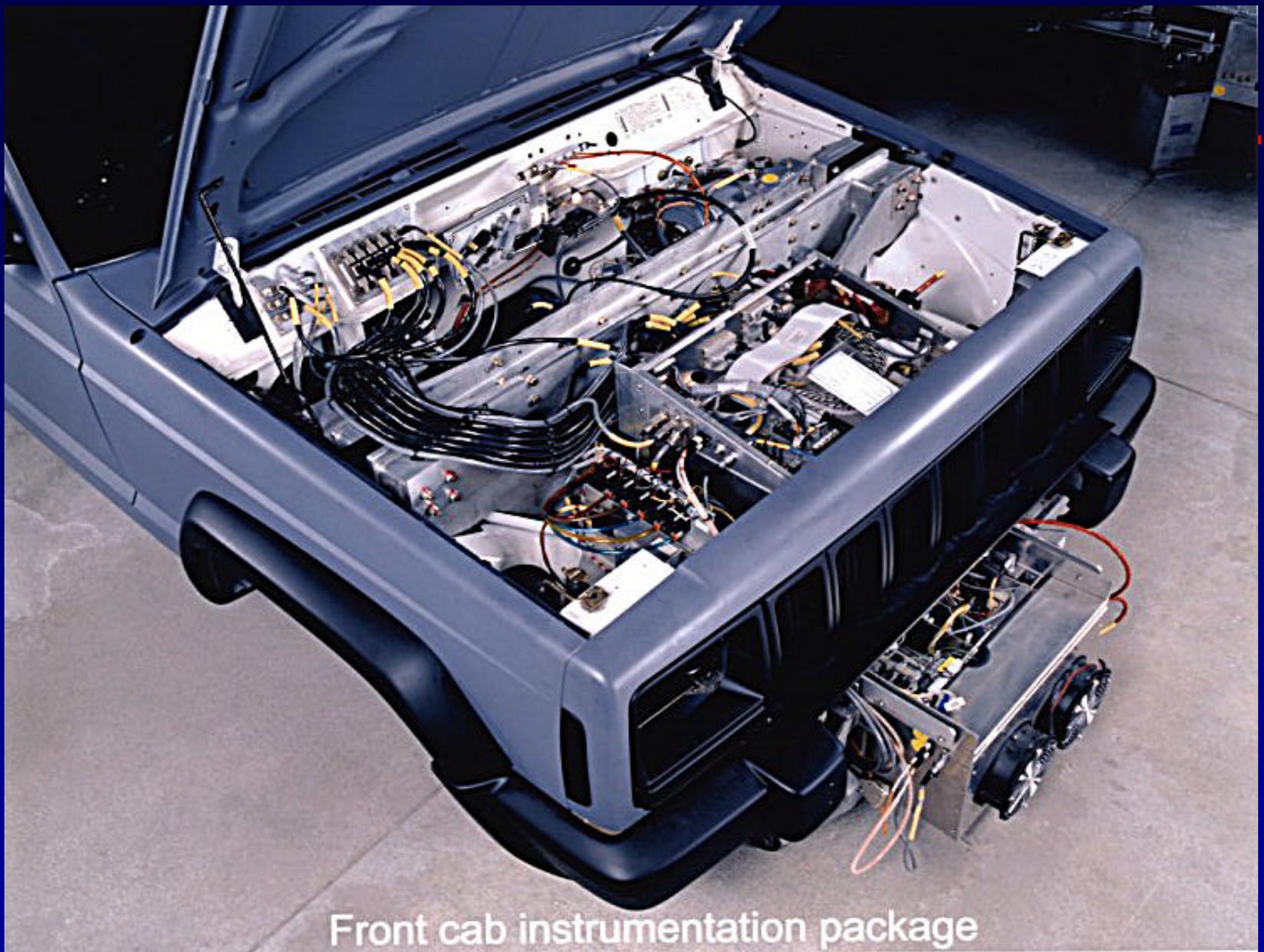
15 projectors in dome



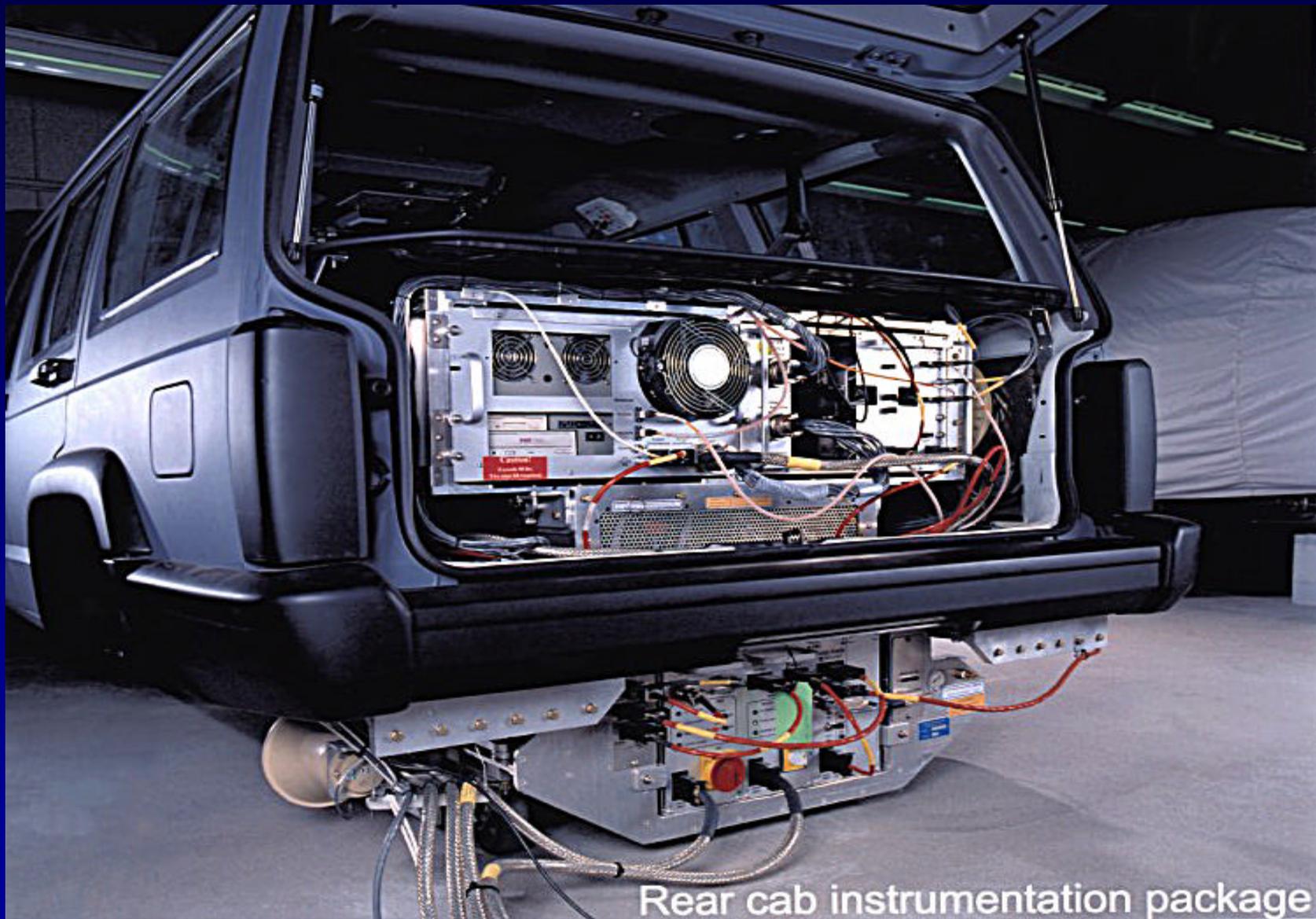
Dome-projected image



Jeep Cherokee cab in dome



Front cab instrumentation package



Rear cab instrumentation package



Taurus cab



Taurus interior



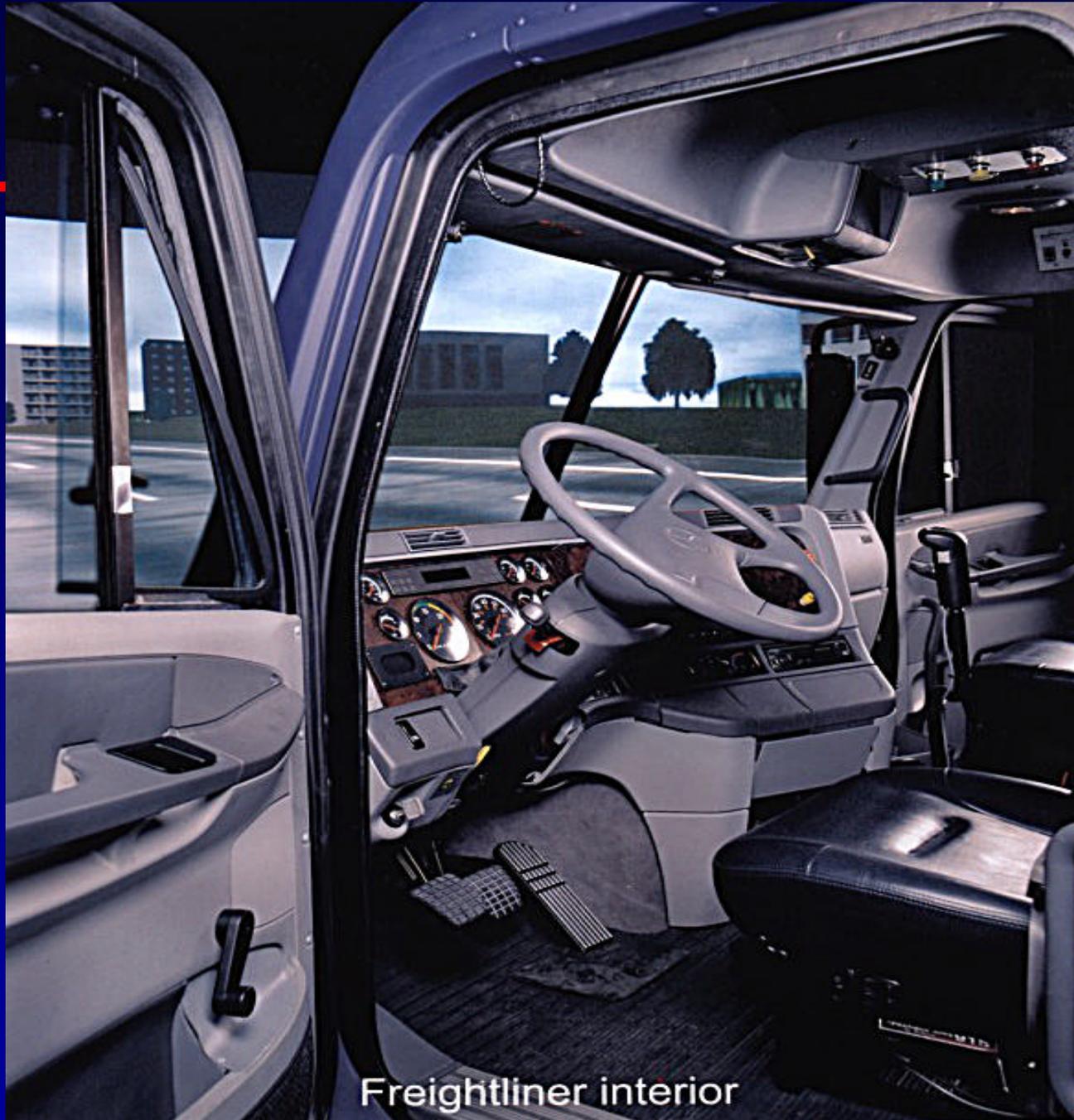
Malibu cab



E-Stop/Communications package in-cab



Freightliner cab



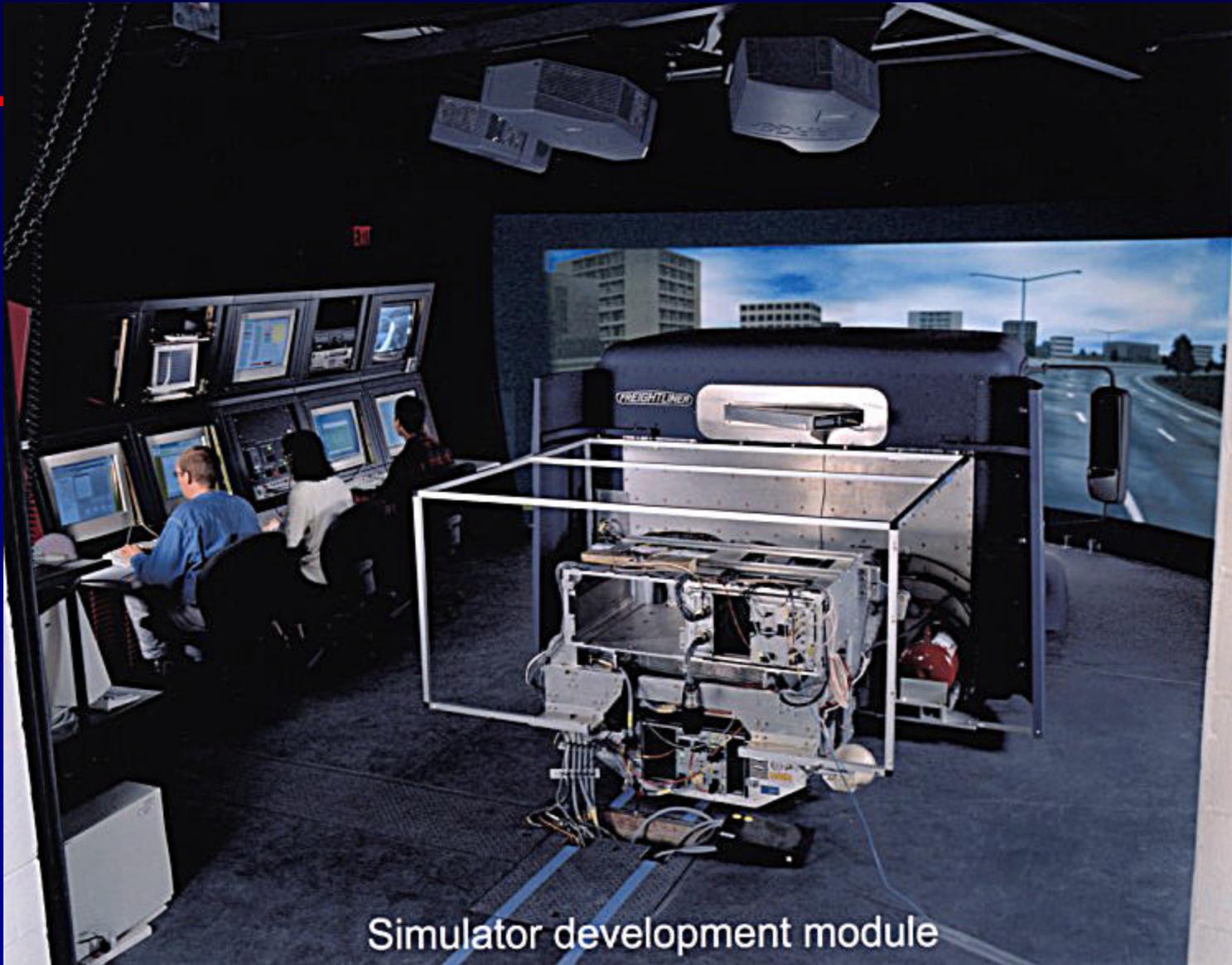
Freightliner interior



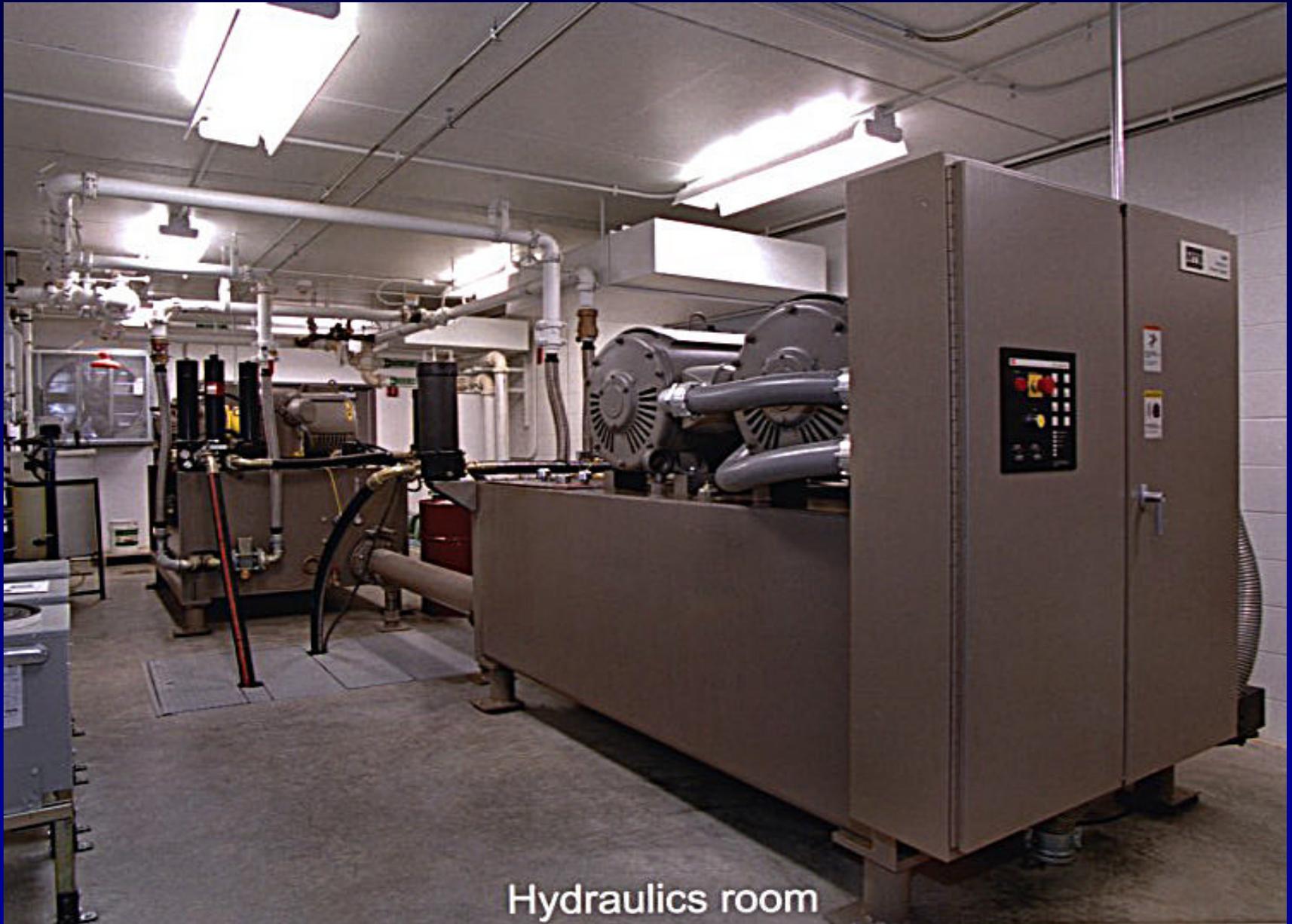
EATON TRUCK TRANSMISSION SIMULATOR FOR NADS

- ***140 TRANSMISSIONS***
- ***280 ENGINES***
- ***33 DRIVE AXLE RATIOS***
- ***300 TIRE SIZES***





Simulator development module

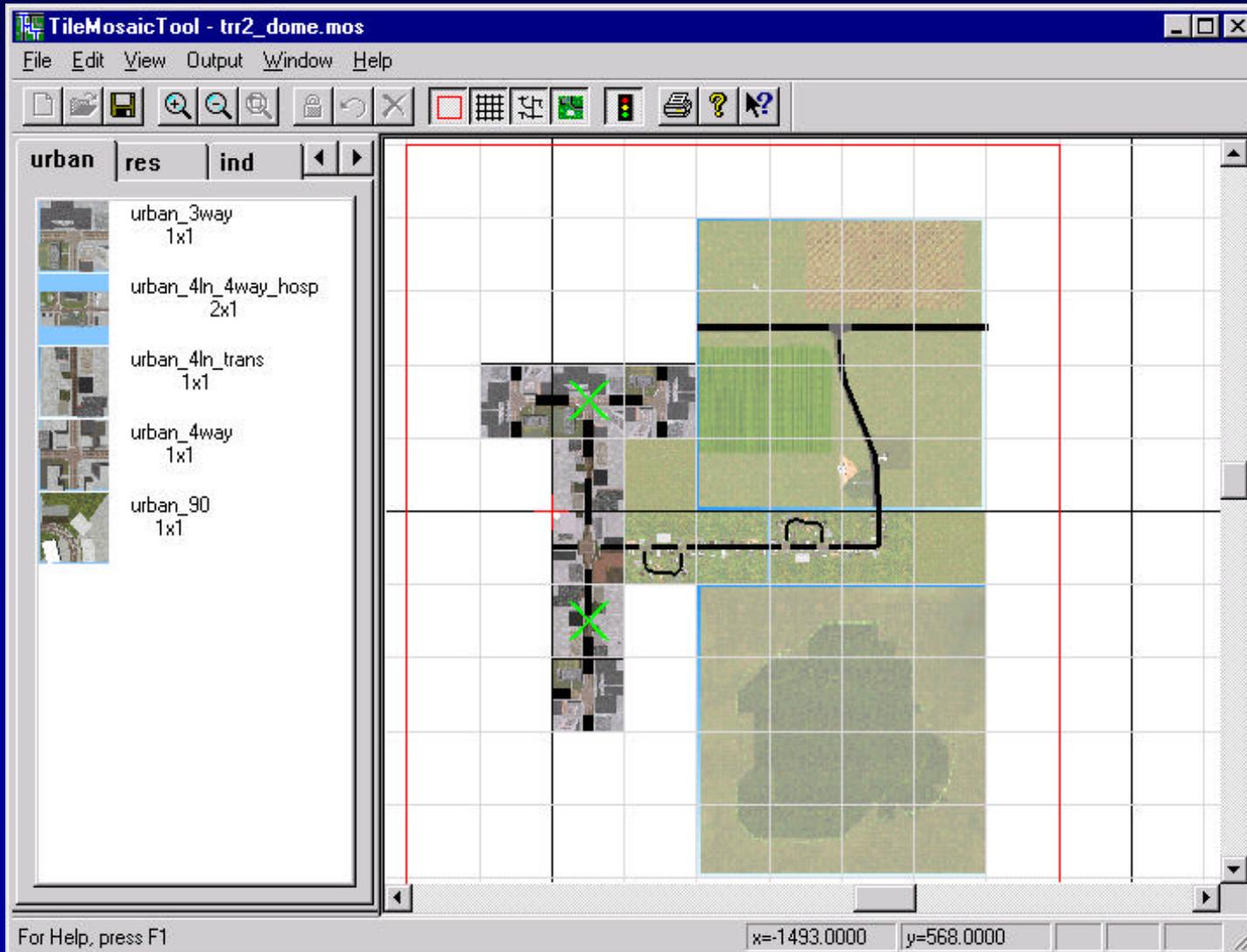


Hydraulics room

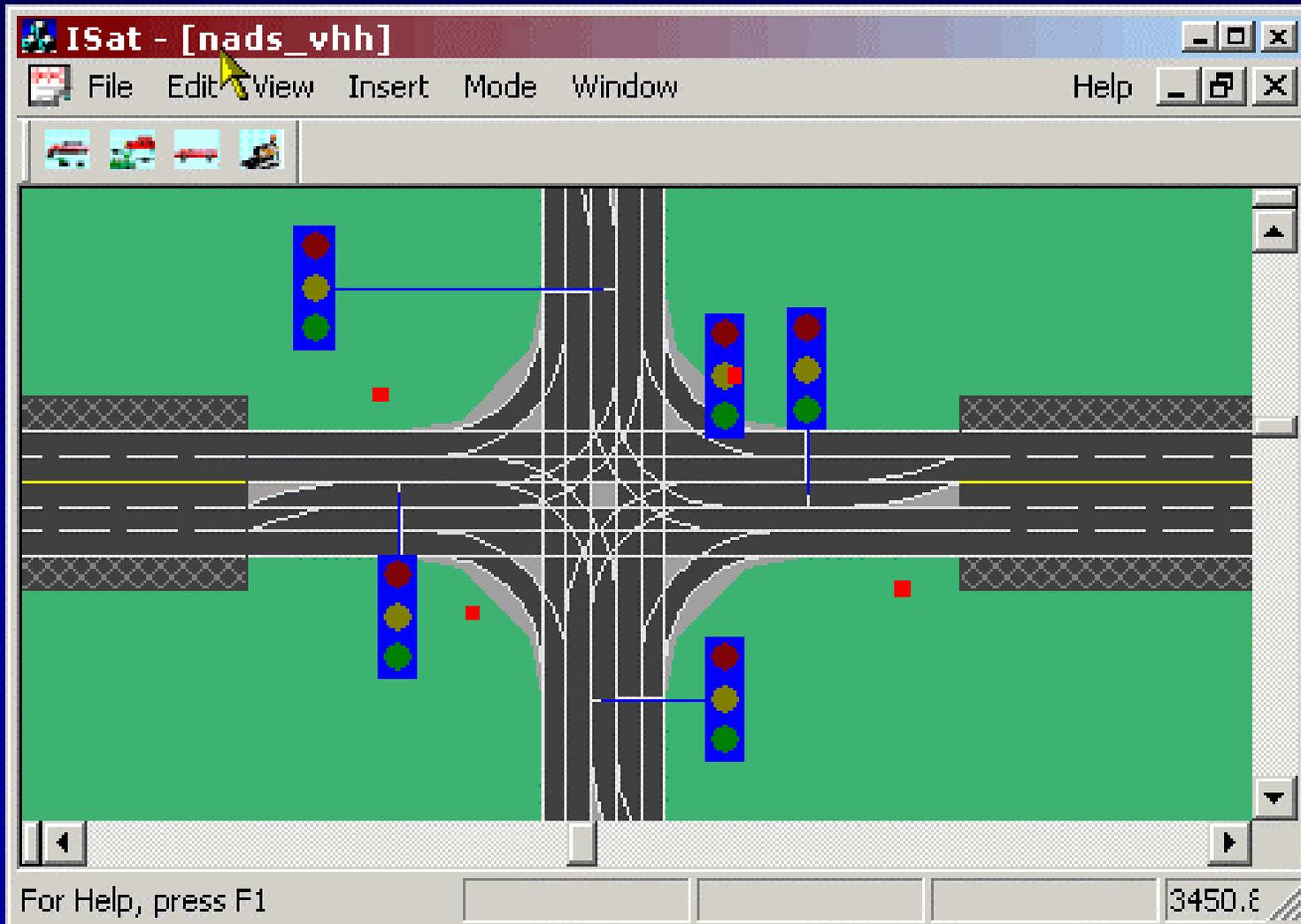


Electrical room

TILE MOSAIC TOOL FOR DRIVING SCENE DATABASES



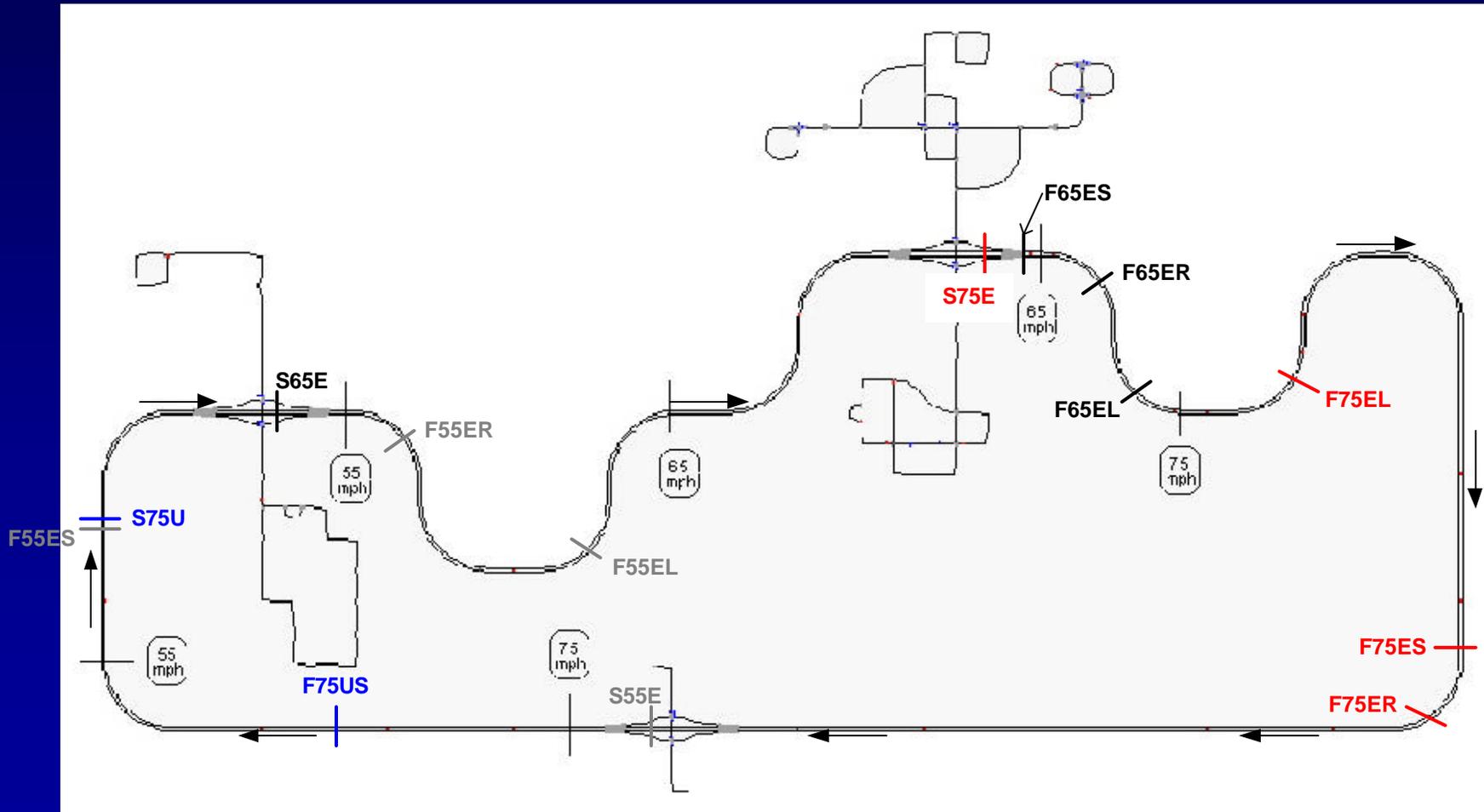
Interactive Scenario Authoring Tools

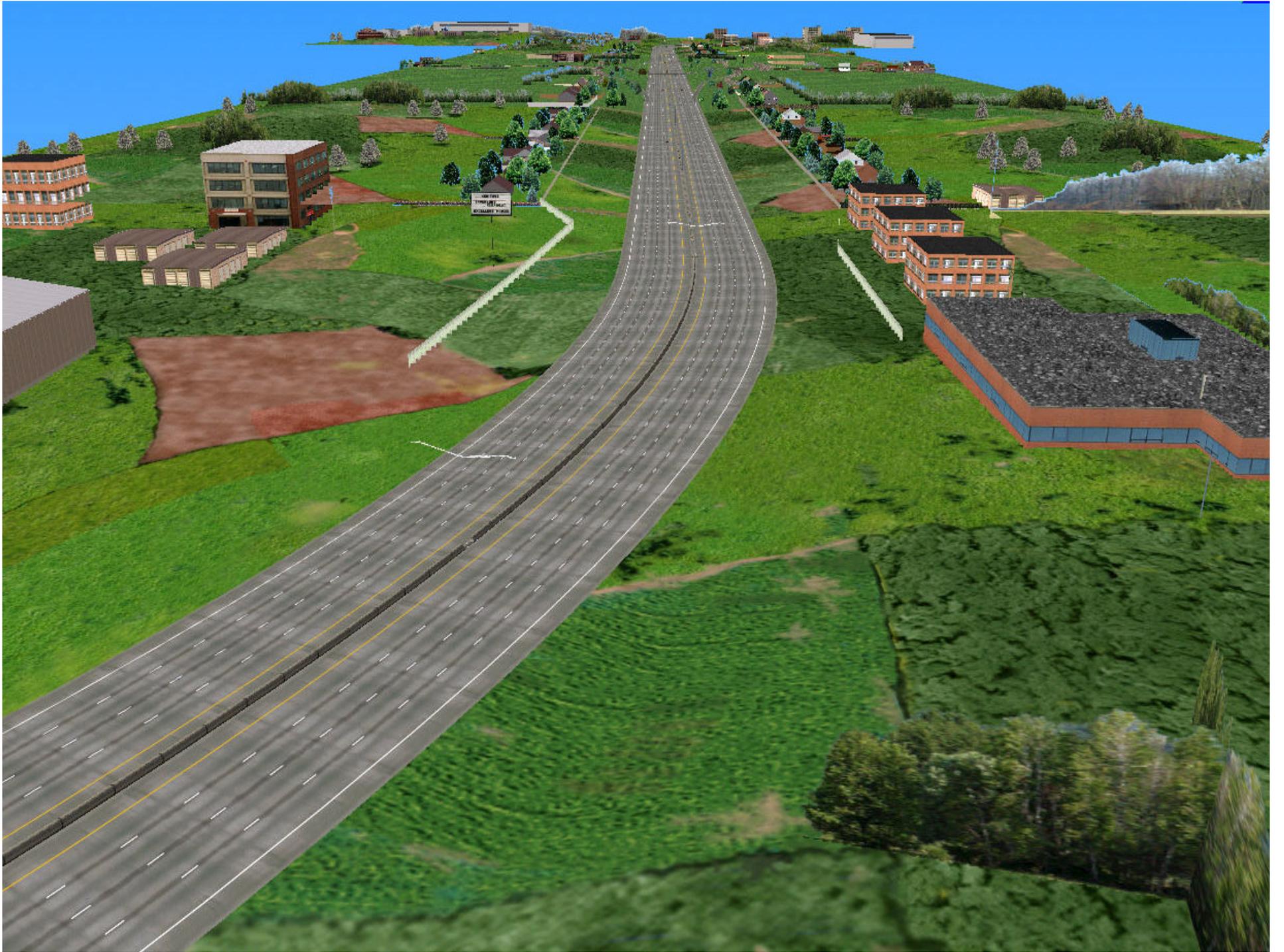


FY 2001 RESEARCH PROGRAM

- ***DRIVER REACTION TO SUDDEN TIRE FAILURE***
- ***DRIVER DISTRACTION FROM WIRELESS PHONES AND OTHER IN-VEHICLE DEVICES***
- ***EFFECTS OF ALCOHOL DOSAGE ON DRIVER PERFORMANCE IN DEMANDING SITUATIONS***
- ***TOTAL RESEARCH BUDGET FOR FY 01- \$3.5 M***

Tire Failure Driving Course





DISTRACTION RESEARCH

- **Planning Underway for Series of Projects on Driver Inattention and Distraction**
 - **Due to Wireless Communications Devices**
 - **Due to In-Vehicle Information Systems**
- **Development of Research Tools**
 - **Standard NADS Driver Distraction Test Methods, Procedures, & Test Courses**
 - **Assessment Techniques for Evaluating Cognitive Driver Distraction**

NADS ALCOHOL RESEARCH PROGRAM

- **NADS Alcohol Research Program - Examine The Effect Various Levels Of (BAC) Under Conditions That Cannot Be Safely Studied On The Open Road**
- **A Baseline and Three Focused Alcohol Studies Have Been Planned for the NADS**
